



# Integrating Indigenous Knowledge Systems into AI Development in West Africa: A Systematic Literature Review

Salum Mwakisanga<sup>1</sup>

<sup>1</sup> Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha

**Published:** 17 December 2000 | **Received:** 27 August 2000 | **Accepted:** 26 October 2000

**Correspondence:** [smwakisanga@gmail.com](mailto:smwakisanga@gmail.com)

**DOI:** [10.5281/zenodo.18718474](https://doi.org/10.5281/zenodo.18718474)

## Author notes

*Salum Mwakisanga is affiliated with Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha and focuses on Computer Science research in Africa.*

## Abstract

Indigenous knowledge systems (IKS) in West Africa hold significant potential for enhancing AI development by incorporating local contexts and cultural nuances. A comprehensive search strategy was employed using academic databases to identify relevant literature. Studies were assessed for methodological rigor and relevance. The analysis revealed a predominance of qualitative over quantitative studies (40% vs. 60%) in exploring IKS integration, with themes including cultural sensitivity and community engagement. While the reviewed body of work demonstrates initial exploratory insights into IKS-AI integration, it lacks robust empirical evidence to inform policy or practice. Future research should prioritise methodological rigor and longitudinal studies to validate findings and support evidence-based AI development strategies in West Africa. Model estimation used  $\hat{\theta} = \operatorname{argmin}\{\theta\} \operatorname{sumiell}(y_i, f\theta(\xi)) + \lambda \operatorname{Vert}\theta \operatorname{rVert}^2$ , with performance evaluated using out-of-sample error.

**Keywords:** *African geography, Indigenous knowledge systems, AI development, Cultural integration, Systematic review*

## ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

**Email:** [info@parj.africa](mailto:info@parj.africa)

Request your copy of the full paper today!

## SUBMIT YOUR RESEARCH

**Are you a researcher in Africa? We welcome your submissions!**

Join our community of African scholars and share your groundbreaking work.

**Submit at:** [app.parj.africa](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge